Agricultural Extension Service
The University of Tennessee

SP291-E

Vegetables

Growing Sweet Corn in Home Gardens

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Corn is one of the most popular and diverse vegetables. Many types are grown, including field corn, ornamental corn, popcorn, sweet corn, several different supersweet corns and even broomcorn. Corn may be white, yellow, bicolor and many shades of red, blue or even black. Most home gardeners grow white, yellow or bicolor corn or supersweet corn, so this factsheet will be restricted to these.

The yield and quality of home-grown corn also vary more widely than the yield and quality of most other vegetables. The type of corn grown, cultural conditions of growth, harvest and post-harvest treatment all affect yield and quality. Each of these will be considered in this factsheet.

Type

There are three main types of sweet or supersweet corn marketed to home gardeners.

The traditional type is referred to as "sugary" and is denoted in many seed sources by the letters "su."

The second type of supersweet corn has a very high sugar content and extremely shrunken seeds due to a small, weak embryo. This type is often marketed as "extra sweet" or "ultrasweet" and is usually referred to by the letters "sh_2" for shrunken. Many of the older sh_2 varieties perform poorly under Tennessee growing conditions.

The third type is also a supersweet corn. It tends to have a higher sugar content and to maintain or extend this sugar content longer on the plant and also after harvest. It is usually referred to as "se" for "sugar extended." Se corn tends to be very sweet, tender, crisp and usually retains these qualities after harvest. However, its requirements for warm soil temperatures at germination and isolation from some other corn types at pollination make it more difficult to grow.

Some gardeners also grow and consume various specialty field corns, such as "Trucker's Favorite" or "Hickory King." These are not included in this factsheet.

Varieties

There are several hundred good varieties of sweet and supersweet corn available to homeowners. Many of them do well in Tennessee. Table 1 lists some of the better varieties for home gardeners and their characteristics.

Table 1. Recommended Corn Varieties in Home Gardens

Variety	Color	Type	Approximate Days to Maturity	Comments
Kandy Korn	Yellow	SE	80	Excellent sugar
Honey ‘n Pearl	Bi-colored	SH_2	78	Sweet. All-American Winner.
Silverado	White	SE	88	Silver Queen-type, but slightly earlier. Very good sugar.
Merit	Yellow	SU	88	Large ear, but may produce starchy texture.
Incredible	Yellow	SE	90	Large ears. Excellent flavor.
Bi-Queen	Bi-colored	SU	92	Both yellow and white kernels. Excellent quality.
Golden Queen	Yellow	SU	93	Standard of the yellow su varieties.
Silver Queen	White	SU	93	Standard of the white su varieties.

Seed

Seed germinates less well as it gets older. All seed keeps best under cool, dry conditions. Reseal seed packages with tape, place them in a closed container and refrigerate or freeze the seed to keep it more than one year. If seed is allowed to remain in hot, humid conditions from one year to the next, it is unlikely that the seed will germinate satisfactorily.

Seed from hybrid corn should never be saved for planting, as yields will decrease by 25 percent or more compared to new hybrid seed. Most purchased corn seed has been treated with insecticide and fungicide to protect it during germination. Treated seed must never be eaten or fed to livestock. Treated seed is more likely to produce good plant stands than untreated seed.

Planting

Sweet corn is a warm-season crop that germinates and grows poorly during cool weather. It may be killed by frost. The supersweet and extra sweet varieties are even more sensitive to cool weather and are not normally planted until the soil temperature reaches 60 F.

The recommended first planting date will vary across the state and from year to year.Approximate dates for the various areas of the state are given in Table 2.

Table 2. Recommended Planting Dates for Corn in the Home Garden

Area	Sugary(su)Varieties	Shrunken(sh_2)or se Varieties
West Tennessee	April 10	April 20
Middle Tennessee		
a. Low elevations	April 20	May 1
b. High elevations	April 25	May 5
East Tennessee		
a. Low elevations	April 25	May 5
b. High elevations	May 1	May 10

To extend the harvest season, make more than one planting. A second planting should not be made until the first planting has three fully developed leaves. This may require more than three weeks in the early spring, but only two weeks later in the season. It should be noted that the later sweet corn matures, the more difficult insect control will be.

The seeding rate should be about 1 1/3 ounces of large-seeded varieties or 9/10 ounce of shrunken gene types per 100 feet of row. With large-seeded varieties, this will provide 155-235 seed and should provide 170-300 seed of the smaller-seeded varieties. Seeding at this rate will provide a good plant population if growing conditions are favorable.

The optimum planting depth varies with soil types and with the time of planting. Plant deeper in light soils and shallower in heavy soils. Early plantings should be shallower than later plantings because better moisture and warmer temperatures exist near the surface. If late plantings are shallow (1/2 inch), there is less likelihood that seed will germinate. A good rule of thumb is to plant seed two to three times deeper than their average diameter.

Plant Spacing

In areas with unlimited space, sweet corn is usually spaced 10-15 inches in the row, with 36 to 42 inches between rows. A common mistake made by home gardeners is to plant sweet corn in only one or two rows at a time. This usually results in poor pollination and low yields. Plant sweet corn in blocks consisting of a minimum of three rows per block.

In small areas having limited space, but with good soil moisture and organic matter, it is possible to plant in double rows that are 10 to 12 inches apart with 30 to 42 inches between each double row. Plants within each row are spaced about 12 inches apart. Planting at these spacings will provide good pollination and good yields as long as the blocks are no more than three or four sets of double rows wide and proper moisture, nitrogen and weed control are provided. The double-row concept is illustrated in Figure 1.

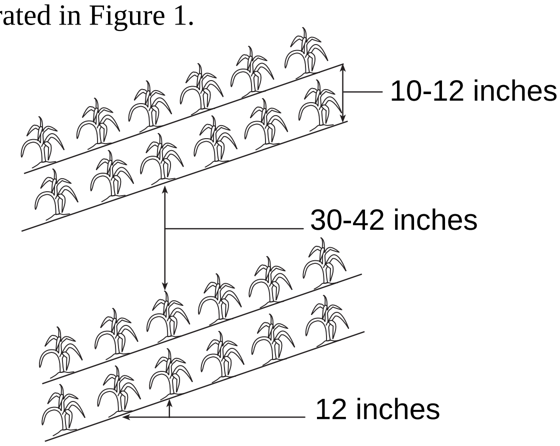


Figure 1. Sweet corn planted in double rows. Use this concept in small areas where space is a problem.

There is no need to remove suckers from sweet corn and no advantage to doing so.

Isolation

Most gardeners know that sweet corn may not be as sweet if it crosses with field corn. Likewise, some of the supersweet or extrasweet corns may not be as sweet if they cross with other types of corn or even with other supersweet corn varieties. Corn varieties can be prevented from crossing by isolating them from each other. They can be isolated either by planting them 100 yards or more apart or by timing plantings so each sheds pollen at a different time. It is a good idea to isolate different sweet corn types from each other unless it is known that crossing will not affect them.

Fertilization

Fertilization should be consistent with current UT soil recommendations. Sweet corn is a heavy user of nitrogen, so good yields depend upon adequate levels being present. Apply recommended fertilizer applications at planting or soon after seedling emergence. When sweet corn is 8 to 12 inches tall, sidedress with 1.5 pounds of ammonium nitrate per 100 foot of row. Proper nitrogen fertilization is very important to developing a strong, tall stalk with the se or sh_2 types.

Weed Control

Control weeds by preventing them from becoming established. This means that weeds should be removed while both corn and weeds are small. If double rows are grown, a rototiller can be used between each set of double rows and hand tools can be used between the double rows. If weeds are removed while they are small, corn will grow at a rapid rate and will reduce weed seed emergence as the corn gradually shades the soil.

Insect Control

European corn borer, corn earworms, Japanese beetles and flea beetles are the major insects affecting sweet corn in home gardens. Corn borers feed on the foliage and internal portions of the stalk. They are usually identified by insect holes bored into the stalk and droppings on the foliage. The corn earworm usually feeds on the tip of the ear. Japanese beetles normally congregate on the tip of the ear and feed on the silks. This may reduce pollination and yields.

European corn borer control is difficult for home gardeners because sprays are effective only during the two-to-three day period after eggs hatch and before larvae bore into the stalks. Pay close attention to the presence of eggs. Eggs are white and one-half the size of a pinhead. They are laid in masses that overlap like fish scales. Eggs

darken just before hatching. To control, use the recommended insecticides found in Extension PB 595, "**You Can Control Garden Insects,**" available at your county Extension office. Two or more treatments may be needed weekly, since four generations may occur each season.

The corn earworm and Japanese beetles can usually be effectively controlled by applying recommended insecticides as a foliar spray directly to the silk when it first appears, and continuing weekly until harvest.

Irrigation

Sweet corn is a high user of water and requires adequate moisture throughout the growing season, especially if the double-row technique is used. Water may be applied by trickle or sprinkler irrigation. It should be provided throughout the season, but is most important during germination and tassel and silk formation.

Water for irrigation can be applied with a sprinkler. A common mistake of home gardeners is to assume that wetting the surface is all that is needed when using a sprinkler. It is important to wet the effective root zone of the plant. This means that the depth of soil containing the larger percentage of active roots should be moistened. Usually, this is the top 8 to 12 inches. An easy way to do this is physically check the depth of wetting after the system has run for a period oftime. When the soil is moist to the required depth, shut the system off.

A trickle system can also be connected directly to the household watering system through hose and filter connections. It only requires 8-10 pounds of inline pressure to operate a trickle system. Plastic hose with properly spaced emitters can be laid down each row to deliver water to the base of each plant. This places water where it is most needed and is most efficiently used. Trickle systems require considerably less water than sprinkler systems, but are more laborious and costly to install and manage.

A typical system is shown in Figure 2.

A trickle system requires relatively level land to operate efficiently. Evaporation can be reduced by applying water in late afternoon or at night. The depth to moisten is the effective root zone of the plants, as mentioned with the sprinkler system.

Harvesting

Harvest sweet corn when the silk end of the ear is completely filled out, the silk has turned brown and the kernels are firm but in the milk stage. If the kernels are firm, but can be punctured by applying pressure with the thumb nail, the ear should be in the proper stage to harvest. It usually requires 17 to 21 days from full silking until harvest.

Sweet corn will have its highest sugar and best flavor if it is cooked and eaten immediately after harvest.

Handling

If sweet corn in to be frozen or canned, it should be shucked, de-silked and brought to a boil for a period of three minutes immediately after harvest. Cool it as rapidly as possible after boiling. It may then be either frozen or canned. Immediate processing in this manner reduces sugar loss and greatly improves flavor. Avoid holding sweet corn for long periods at ambient temperatures after it is harvested.

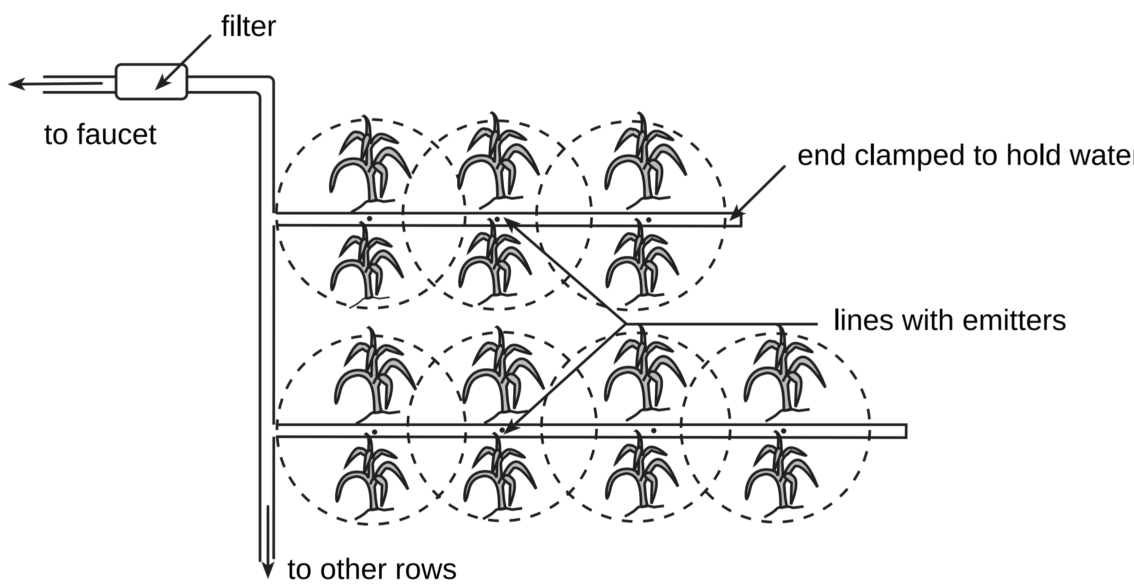


Figure 2. Double row with trickle system.

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